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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,263	02/17/2004	Peter T. Aylward	84885LMB	3431

7590 08/28/2007

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EXAMINER	
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ART UNIT	PAPER NUMBER
1774	

MAIL DATE	DELIVERY MODE
08/28/2007	PAPER

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/780,263
Filing Date: February 17, 2004
Appellant(s): AYLWARD ET AL.

Lynnte M. Blank
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 05-22-07 appealing from the Office action mailed 12-28-06.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,537,656	DONTULA ET AL.	03-2003
5,916,672	REEVES ET AL.	06-1999
6,872,673	MACAULAY ET AL.	03-2005
6,447,976	DONTULA ET AL.	09-2002

6,093,481	LYNN ET AL	06-2000
4,764,420	GLUCK ET AL	08-1988
6,103,152	GEHLSEN ET AL.	08-2000
6,876,467	YAMAGUCHI ET AL.	04-2005
6,342,329	TSUDA ET AL.	01-2002
6,627,018	O'NEILL ET AL.	09-2003

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 26 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The use of "autochrome" appears to be a trademark. The use of trademarked terms in claims does not identify or describe the goods associated with the trademark or trade name. Trademarks or trade names are used to identify a source of goods, and not the goods themselves. See MPEP 2173.05(u). Replacement of trademarked terms with a generic description is advised.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible

harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-49 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-26 of U.S. Patent No. 6,537,656 to Dontula et al. in view of UPSN 5,916,672 to Reeves et al.

Dontula teaches the closed cell foam core sheet with imaging layer applied thereto (ABSTRACT, patented claims). Although the conflicting claims are not identical, they are not patentable distinct from each other because the present claims differ only in the recitation of the density gradient recitations. However, Reeves teaches a base wherein said base comprises a closed cell polypropylene or polyurethane expanded foam core sheet (32, FIG. 1 and 142, FIG. 3 and associated text), wherein said at least one closed cell foam layer, and wherein said closed cell foam core sheet has a density wherein said density comprises a gradient (e.g. col. 3, lines 56-62, and FIG. 3 showing smaller cells in 134 and 138 and larger ones in 140). Reeves teaches the density gradient in the polymer core is effected by the expansion of cells and amount of air entrapped and may be contained in a numerous amounts of layers to reach the chosen thickness (col. 6, lines 14-50). Thus, it would have been obvious to one having ordinary skill to modify

the invention based on the teachings of Reeves above (col. 6, lines 14-50). Since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272. Thus the present claims are broader in scope and encompasses that which is claimed by the Dontula reference.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, and 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,916,672 to Reeves et al. in view of USPN 6,872,673 to MacAulay.

Reeves teaches an article per instant claim 1 comprising a base wherein said base comprises a closed cell polypropylene or polyurethane expanded foam core sheet (32, FIG. 1 and 142, FIG. 3 and associated text, e.g. Reeves shows a closed cell in FIGS. 1 and 3, but does not recite the bead like cells "closed", but because the figure shows circularly beaded cells, they are considered to be closed), wherein said closed cell foam core sheet comprises two closed cell foam layers (132, 136, FIG. 3 and associated text), wherein said at least one closed cell foam layer, and wherein said closed cell foam core sheet has a density wherein said density comprises a gradient (e.g. col. 3, lines 56-62, and FIG. 3 showing smaller cells in 134 and 138 and larger ones in 140).

Reeves teaches the density gradient in the polymer core is effected by the expansion of cells and amount of air entrapped (solid polymer matrix and gaseous phase) and may be contained in a numerous amounts of layers to reach the chosen thickness (col. 6, lines 14-50).

Thus, while Reeves doesn't state the density gradient decreasing from center to surface or the use of three foam layers, it would have been obvious to one having ordinary skill to modify the invention based on the teachings of Reeves above (col. 6, lines 14-50). Since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272. Instant claims 1-3, and 7-13 are addressed.

Reeves does not teach the polypropylene or polyurethane closed cell expanded foam layer comprises a polymer that has been expanded through the use of a blowing agent per instant claim 1.

MacAulay teaches a laminate comprising expanded polyolefin and polyurethane foams being closed or open comprising a blowing agent useful for strength and structural integrity (col. 3, lines 20-22, col. 4, lines 25-col. 5, line 26).

It would have been obvious to one having ordinary skill in the art to have modified the polymer foam core of Reeves to use the polymer closed cell foam core with use of a blowing agent of MacAulay because MacAulay teaches a laminate comprising expanded polyolefin and polyurethane foams being closed or open comprising a blowing agent useful for strength and structural integrity (col. 3, lines 20-22, col. 4, lines 25-col. 5, line 26 of MacAulay).

To the melt flow rates of the polymers (per instant claims 7-9), they are inherent to the polymer absent any evidence to the contrary.

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,916,672 to Reeves et al. in view of USPN 6,093,481 to Lynn et al.

Reeves teaches an article per instant claim 1 comprising a base wherein said base comprises a closed cell polypropylene or polyurethane expanded foam core sheet (32, FIG. 1 and 142, FIG. 3 and associated text, e.g. Reeves shows a closed cell in FIGS. 1 and 3, but does not recite the bead like cells as "closed", but because the figure shows circularly beaded cells, they are considered to be closed), wherein said closed cell foam core sheet comprises two closed cell foam layers (132, 136, FIG. 3 and associated text), wherein said at least one closed cell foam layer, and wherein said closed cell foam core sheet has a density wherein said density comprises a gradient (e.g. col. 3, lines 56-62, and FIG. 3 showing smaller cells in 134 and 138 and larger ones in 140).

Reeves teaches the density gradient in the polymer core is effected by the expansion of cells and amount of air entrapped (solid polymer matrix and gaseous phase) and may be contained in a numerous amounts of layers to reach the chosen thickness (col. 6, lines 14-50). Thus, while Reeves doesn't state the density gradient decreasing from center to surface or the use of three foam layers, it would have been obvious to one having ordinary skill to modify the invention based on the teachings of Reeves above (col. 6, lines 14-50). Since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272. Instant claims 1-3, and 7-13 are addressed.

Reeves does not teach the polypropylene or polyurethane closed cell expanded foam layer comprises a polymer that has been expanded through the use of a blowing agent per instant

claim 1, nor a polymer of polypropylene derivatives or copolymers or blends or polyester (instant claims 3-6).

Lynn teaches a laminate comprising polymer foam cores of polyolefin, polyurethane, polyester, and other copolymers and polymeric types and blends being closed or open comprising a blowing agent useful for strength and structural integrity (col. 2, lines 30-40, col. 5, lines 40-65, col. 6, lines 1-10 e.g. mixed PUR/PIR foams of polyester polyols).

It would have been obvious to one having ordinary skill in the art to have modified the polymer foam core of Reeves to use the polymer of polyolefin, polyurethane, polyester, and other copolymers and polymeric types and blends closed cell foam core with use of a blowing agent because Lynn teaches a laminate comprising polymer foam cores of polyolefin, polyurethane, polyester, and other copolymers and polymeric types and mixture blends being closed or open comprising a blowing agent useful for strength and structural integrity (col. 2, lines 30-40, col. 5, lines 40-65, col. 6, lines 1-10).

To the melt flow rates of the polymers (per instant claims 7-9), they are inherent to the polymer absent any evidence to the contrary.

Claims 1-3, 7-11, 15, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,916,672 to Reeves et al. in view of USPN 4,764,420 to Gluck et al.

Reeves teaches an article per instant claim 1 comprising a base wherein said base comprises a closed cell polypropylene or polyurethane expanded foam core sheet (32, FIG. 1 and 142, FIG. 3 and associated text, e.g. Reeves shows a closed cell in FIGS. 1 and 3, but does not recite the bead like cells "closed", but because the figure shows circularly beaded cells, they are

considered to be closed), wherein said closed cell foam core sheet comprises two closed cell foam layers (132, 136, FIG. 3 and associated text), wherein said at least one closed cell foam layer, and wherein said closed cell foam core sheet has a density wherein said density comprises a gradient (e.g. col. 3, lines 56-62, and FIG. 3 showing smaller cells in 134 and 138 and larger ones in 140).

Reeves teaches the density gradient in the polymer core is effected by the expansion of cells and amount of air entrapped and may be contained in a numerous amounts of layers to reach the chosen thickness (col. 6, lines 14-50). Thus, while Reeves doesn't state the density gradient decreasing from center to surface or the use of three foam layers, it would have been obvious to one having ordinary skill to modify the invention based on the teachings of Reeves above (col. 6, lines 14-50). Since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272. Instant claims 1-3, and 7-13 are addressed.

Reeves does not teach the polypropylene or polyurethane closed cell expanded foam layer comprises a polymer that has been expanded through the use of a blowing agent per instant claim 1. Further to claim 2, if the broad term "a gaseous phase" is intended to mean a material, Gluck is used below accordingly.

Gluck teaches a rigid foam of expanded polyolefin and polyurethane being closed or open comprising a gaseous blowing agent for being lightweight and highly permeable (Abstract, col. 1, lines 50-65, col. 6, lines 25-50, col. 12, lines 3-50, col. 14, lines 10-36).

It would have been obvious to one having ordinary skill in the art to have modified the polymer foam core of Reeves to use the polymer closed cell foam core with use of a blowing

agent and gaseous phase of Gluck because Gluck teaches a rigid foam of expanded polyolefin and polyurethane being closed or open comprising a gaseous blowing agent for being lightweight and highly permeable (Abstract, col. 1, lines 50-65, col. 6, lines 25-50, col. 12, lines 3-50, col. 14, lines 10-36).

To the melt flow rates of the polymers (per instant claims 7-9), they are inherent to the polymer absent any evidence to the contrary.

Reeves does not teach an orientation or cast per claims 15 and 18.

Gluck shows the foam made in machine direction and cast (FIG. 1 and associated text).

It would have been obvious to one having ordinary skill in the art to have modified the Reeves foam in machine direction because Gluck shows a conventional way to produce the foam made in machine direction and cast (FIG. 1 and associated text).

Claims 1-11, 14-20, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,916,672 to Reeves et al. in view of USPN 6,103,152 to Gehlsen et al.

Reeves teaches an article per instant claim 1 comprising a base wherein said base comprises a closed cell polypropylene or polyurethane expanded foam core sheet (32, FIG. 1 and 142, FIG. 3 and associated text, e.g. Reeves shows a closed cell in FIGS. 1 and 3, but does not recite the bead like cells "closed", but because the figure shows circularly beaded cells, they are considered to be closed), wherein said closed cell foam core sheet comprises two closed cell foam layers (132, 136, FIG. 3 and associated text), wherein said at least one closed cell foam layer, and wherein said closed cell foam core sheet has a density wherein said density comprises

a gradient (e.g. col. 3, lines 56-62, and FIG. 3 showing smaller cells in 134 and 138 and larger ones in 140).

Reeves teaches the density gradient in the polymer core is effected by the expansion of cells and amount of air entrapped and may be contained in a numerous amounts of layers to reach the chosen thickness (col. 6, lines 14-50). Thus, while Reeves doesn't state the density gradient decreasing from center to surface or the use of three foam layers, it would have been obvious to one having ordinary skill to modify the invention based on the teachings of Reeves above (col. 6, lines 14-50). Since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272. Instant claims 1-3, and 7-13 are addressed.

Reeves does not teach the polypropylene or polyurethane closed cell expanded foam layer comprises a polymer that has been expanded through the use of a blowing agent per instant claim 1, nor using the polymers of claims 3-6. Further to claim 2, if the broad term "a gaseous phase" is intended to mean a material, Gehlsen is used below accordingly.

Gehlsen teaches a rigid foam of expanded polyolefin, polyester, and polyurethanes comprising a gaseous blowing agent useful in reducing density of a polymer matrix foam (Abstract, col. 1, lines 5-40, col. 2, lines 20-68, col. 6, line 5-60, col. 7, lines 1-68-col. 8, line 10 and FIG. 7).

It would have been obvious to one having ordinary skill in the art to have modified the polymer foam core of Reeves to use the polymers as claimed and a closed cell foam core with use of a blowing agent and gaseous phase because Gehlsen teaches a rigid foam of expanded polyolefin, polyester, and polyurethanes comprising a gaseous blowing agent useful in reducing

density of a polymer matrix foam (Abstract, col. 1, lines 5-40, col. 2, lines 20-68, col. 6, line 5-60, col. 7, lines 1-68-col. 8, line 10 and FIG. 7). The derivatives are obvious variants of the polymers taught by Gehlsen.

To the melt flow rates of the polymers (per instant claims 7-9), they are inherent to the polymer absent any evidence to the contrary.

Reeves does not teach an orientation or cast per claims 15 and 18.

Gehlsen shows the foam made in machine direction and cast (FIG. 7 and associated text).

It would have been obvious to one having ordinary skill in the art to have modified the Reeves foam in machine direction because Gehlsen shows a conventional way to produce the foam made in machine direction and cast (FIG. 7 and associated text).

Reeves does not teach the surface roughness as per claims 14 and 16-17.

Gehlsen teaches the surface of the foam is substantially smooth having an Ra less than about 75 micrometers, falling in Applicant's range of greater than 1.4 and less than 0.4 micrometers per claims 14 and 16-17 (col. 1, lines 30-40 and col. 2, lines 55-68).

It would have been obvious to one having ordinary skill in the art to have modified the foam of Reeves to use the foam of Gehlsen having the required Ra because Gehlsen teaches the surface of the foam is substantially smooth having an Ra less than about 75 micrometers for having a surface smooth enough to adhere to an article of interest (col. 1, lines 30-40 and col. 2, lines 55-68 of Gehlsen).

To claims 19-20 and 29, Reeves does not teach the thickness, however it is an optimizable feature. It would have been obvious to one of ordinary skill in the art to produce a

thickness as claimed, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272. Thickness effects the strength.

Claims 1-11, 19-20, 22-25, 28-39, and 41-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,916,672 to Reeves et al. in view of USPN 6,447,976 to Dontula et al.

Reeves teaches an article per instant claim 1 comprising a base wherein said base comprises a closed cell polypropylene or polyurethane expanded foam core sheet (32, FIG. 1 and 142, FIG. 3 and associated text, e.g. Reeves shows a closed cell in FIGS. 1 and 3, but does not recite the bead like cells "closed", but because the figure shows circularly beaded cells, they are considered to be closed), wherein said closed cell foam core sheet comprises two closed cell foam layers (132, 136, FIG. 3 and associated text), wherein said at least one closed cell foam layer, and wherein said closed cell foam core sheet has a density wherein said density comprises a gradient (e.g. col. 3, lines 56-62, and FIG. 3 showing smaller cells in 134 and 138 and larger ones in 140).

Reeves teaches the density gradient in the polymer core is effected by the expansion of cells and amount of air entrapped and may be contained in a numerous amounts of layers to reach the chosen thickness (col. 6, lines 14-50). Thus, while Reeves doesn't state the density gradient decreasing from center to surface or the use of three foam layers, it would have been obvious to one having ordinary skill to modify the invention based on the teachings of Reeves above (col. 6, lines 14-50). Since it has been held that discovering an optimum value of a result

effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272. Instant claims 1-3, and 7-13 are addressed.

Reeves does not teach the polypropylene or polyurethane closed cell expanded foam layer comprises a polymer that has been expanded through the use of a blowing agent per instant claim 1, nor using the polymers of claims 3-6. Further to claim 2, if the broad term "a gaseous phase" is intended to mean a material, Dontula is used below accordingly.

Dontula teaches an article having a foamed polymer core comprising a polymer foam core, blowing agent, solid polymer matrix, and a gaseous phase (col. 5, lines 1-35) as processing enhancements for the foam.

It would have been obvious to one having ordinary skill in the art to have modified the foam of Reeves to use the ingredients as claimed because Dontula teaches a foamed polymer core comprising a polymer foam core, blowing agent, solid polymer matrix, and a gaseous phase as processing enhancements for the foam (col. 5, lines 1-35 of Dontula).

Reeves does not teach further comprising an imaging layer such as ink jet, thermal dye, electrophotographic applied to the core (instant claims 21-25) and a flange coating layer on the foam of polymer per instant claims 32-36, 41, and 49 or paper of instant claim 39.

Dontula teaches an article having a foamed polymer core comprising an imaging layer such as ink jet, thermal dye, electrophotographic applied to the core to form a superior imaging support and image receiving layers for printability, improve adhesion, high opacity and whiteness (col. 4, lines 15-68, col. 7, lines 30-68, col. 9, lines 35-65, instant claims 21-25) and a flange and coating layer on the foam of polymers per instant claims 32-38, 41 and 49 for support, flexural modulus, surface roughness or smoothness, and optical opacity (col. 5, lines 45-68, col.

7, lines 10-60, col. 8, lines 35-68) and paper to provide brightness and a good starting surface and good formation strength (col.6, lines 55-68, instant claim 39).

It would have been obvious to one having ordinary skill in the art to have modified the foam of Reeves to include an imaging layer such as ink jet, thermal dye, electrophotographic applied to the core as per instant claims 21-25, a flange layer on the foam of polymer per instant claims 32-38 and 41, and of paper as per instant claim 39 because Dontula teaches an article having a foamed polymer core comprising an imaging layer such as ink jet, thermal dye, electrophotographic applied to the core to form a superior imaging support and image receiving layers for printability, improve adhesion, high opacity and whiteness (col. 4, lines 15-68, col. 7, lines 30-68, col. 9, lines 35-65, instant claims 21-25), and a flange and coating layer of polyethylene on the foam of polymers per instant claims 32-38, 41 and 49 for support, flexural modulus, surface roughness or smoothness, and optical opacity (col. 5, lines 45-68, col. 7, lines 10-60, col. 8, lines 35-68) and paper to provide brightness and a good starting surface and good formation strength (col.6, lines 55-68, instant claim 39).

To claims 19-20 and 29, Reeves does not teach the thickness, however it is an optimizable feature. It would have been obvious to one of ordinary skill in the art to produce a thickness as claimed, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272. Thickness effects the strength.

Reeves does not teach the flange and core base having inorganic, brighteners, tenting and whitening agents or opacity recitation as per claims 28 and 42-48 having a b* UVO or L* value as recited per claims 30-31.

Dontula teaches flange and core base having inorganic, brighteners, tenting and whitening agents as per claims 28 and 42-48 having b* UVO or L* value within Applicant's ranges as recited per instant claims 30-31 for enhancing optical properties (col. 7, lines 1-25, col. 8, line 45-col. 9, line 11, Examples, Tables 1-3).

It would have been obvious to have modified the foam article of Reeves to include the ingredients having the values as per claims 28, 30-31 and 42-48 because Dontula teaches including inorganic, brighteners, tenting and whitening agents as per claims 42-48 having b* UVO or L* value within Applicant's ranges as recited per instant claims 30-31 for enhancing optical properties and opacity (col. 5, lines 1-10, col. 7, lines 1-25, col. 8, line 45-col. 9, line 11, Examples, and Tables 1-3).

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,916,672 to Reeves et al. in view of USPN 6,447,976 to Dontula et al. and further in view of USPN 6,876,467 to Yamaguchi.

Reeves and Dontula are relied upon above.

Reeves does not explicitly teach the image comprising an autochrome imaging layer.

Yamaguchi teaches a printer that prints an image shot by a digital still camera or the like on photographic paper and operates on the thermo-autochrome (TA) method is on the market. In TA method, color photographic paper (TA paper) that has C, M and Y layers itself produces the colors when it is heated and the produced colors are fixed when a light of a predetermined wavelength is thrown onto the TA paper. TA method does not require ink or toner (col. 1, lines 5-25).

It would have been obvious to one having ordinary skill in the art to have modified the combination to include an autochrome image because Yamaguchi teaches a printer that prints an image shot by a digital still camera or the like on photographic paper and operates on the thermo-autochrome (TA) method is on the market. In TA method, color photographic paper (TA paper) that has C, M and Y layers itself produces the colors when it is heated and the produced colors are fixed when a light of a predetermined wavelength is thrown onto the TA paper. TA method does not require ink or toner (col. 1, lines 5-25 of Yamaguchi).

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,916,672 to Reeves et al. in view of USPN 6,447,976 to Dontula et al. and further in view of USPN 6,342,329 to Tsuda et al.

Reeves and Dontula are relied upon above.

Reeves does not explicitly teach a crushable dye encapsulated imaging layer.

Tsuda teaches photocuring compositions including a dye are supported on a substrate in a microcapsule-encapsulated state, so that it is possible to provide an inexpensive image-forming medium with which full-color printing is possible and a reduction in density of the 3 primary colors, etc., can be prevented using microcapsules that can be easily produced by conventional methods. Tsuda teaches a crushing roller employed when the rupturing doesn't take place on its own. The dye flows out and reacts with the developer and coloration takes place to form an image and the image density is improved. See col. 1, lines 1-50, col. 2, lines 10-68, col. 3, line 32-col. 4, line 20.

It would have been obvious to one having ordinary skill in the art to have modified the combination to further include a crushable dye encapsulated imaging layer because Tsuda teaches photocuring compositions including a dye are supported on a substrate in a microcapsule-encapsulated state, so that it is possible to provide an inexpensive image-forming medium with which full-color printing is possible and a reduction in density of the 3 primary colors, etc., can be prevented using microcapsules that can be easily produced by conventional methods. Tsuda teaches a crushing roller employed when the rupturing doesn't take place on its own. The dye flows out and reacts with the developer and coloration takes place to form an image and the image density is improved. See col. 1, lines 1-50, col. 2, lines 10-68, col. 3, line 32-col. 4, line 20.

Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,916,672 to Reeves et al. in view of USPN 6,447,976 to Dontula et al. and further in view of USPN 6,627,018 to O'Neill et al.

Reeves and Dontula are relied upon above.

Reeves does not explicitly teach the flange comprising fabrics.

However, Dontula teaches the flange comprises polyester and glass fibers (col. 7, lines 20-23).

O'Neill teaches a polymer foam core surrounded by polymeric sheets and includes fibers to make a fibrous layer to impart to the composite modulus stiffness and compressive strength (col. 14, line 12-col. 15, line 30).

It would have been obvious to one having ordinary skill in the art to have modified the combination to include a flange of fabric because Dontula teaches the flange comprises polyester and glass fibers (col. 7, lines 20-23 of Dontula) and O'Neill teaches a polymer foam core surrounded by polymeric sheets and includes fibers to make a fibrous layer to impart to the composite modulus stiffness and compressive strength (col. 14, line 12-col. 15, line 30 of O'Neill).

Claims 1-11, 19-20, 22-25, 28-39, and 41-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,916,672 to Reeves et al. in view of USPN 6,537,656 to Dontula et al.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Reeves teaches an article per instant claim 1 comprising a base wherein said base comprises a closed cell polypropylene or polyurethane expanded foam core sheet (32, FIG. 1 and 142, FIG. 3 and associated text, e.g. Reeves shows a closed cell in FIGS. 1 and 3, but does not recite the bead like cells "closed", but because the figure shows circularly beaded cells, they are considered to be closed), wherein said closed cell foam core sheet comprises two closed cell foam layers (132, 136, FIG. 3 and associated text), wherein said at least one closed cell foam layer, and wherein said closed cell foam core sheet has a density wherein said density comprises a gradient (e.g. col. 3, lines 56-62, and FIG. 3 showing smaller cells in 134 and 138 and larger ones in 140).

Reeves teaches the density gradient in the polymer core is effected by the expansion of cells and amount of air entrapped and may be contained in a numerous amounts of layers to reach the chosen thickness (col. 6, lines 14-50). Thus, while Reeves doesn't state the density gradient decreasing from center to surface or the use of three foam layers, it would have been obvious to one having ordinary skill to modify the invention based on the teachings of Reeves above (col. 6, lines 14-50). Since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272. Instant claims 1-3, and 7-11 are addressed.

Reeves does not teach the polypropylene or polyurethane closed cell expanded foam layer comprises a polymer that has been expanded through the use of a blowing agent per instant claim 1, nor using the polymers of claims 3-6. Further to claim 2, if the broad term "a gaseous phase" is intended to mean a material, Dontula is used below accordingly.

Dontula teaches an article having a foamed polymer core comprising a polymer foam core, blowing agent, solid polymer matrix, and a gaseous phase (col. 4, lines 1-45) as processing enhancements for the foam.

It would have been obvious to one having ordinary skill in the art to have modified the foam of Reeves to use the ingredients as claimed because Dontula teaches a foamed polymer core comprising a polymer foam core, blowing agent, solid polymer matrix, and a gaseous phase as processing enhancements for the foam (col. 4, lines 1-45 of Dontula).

Reeves does not teach further comprising an imaging layer such as ink jet, thermal dye, electrophotographic applied to the core (instant claims 21-25) and a flange coating layer on the foam of polymer per instant claims 1, 32-36, 41, and 49 or paper of instant claim 39.

Dontula teaches an article having a foamed polymer core comprising an imaging layer such as ink jet, thermal dye, electrophotographic applied to the core to form a superior imaging support and image receiving layers for printability, improve adhesion, high opacity and whiteness (col. 8, lines 55-68, col. 9, lines 1-col. 10, line 65, instant claims 21-25) and a flange and coating layer on the foam of polymers per instant claims 32-38, 41 and 49 for support, flexural modulus, surface roughness or smoothness, and optical opacity (col. 4, lines 15-68, col. 5, lines 1-60, col. 6, lines 1-30) and paper to provide brightness and a good starting surface and good formation strength (col. 6, lines 1-30, instant claim 39).

It would have been obvious to one having ordinary skill in the art to have modified the foam of Reeves to include an imaging layer such as ink jet, thermal dye, electrophotographic applied to the core as per instant claims 1, 22-25, a flange layer on the foam of polymer per instant claims 32-38 and 41, and of paper as per instant claim 39 because Dontula teaches an

article having a foamed polymer core comprising an imaging layer such as ink jet, thermal dye, electrophotographic applied to the core to form a superior imaging support and image receiving layers for printability, improve adhesion, high opacity and whiteness (col. 8, lines 55-68, col. 9, lines 1-col. 10, line 65, instant claims 1, 22-25) and a flange and coating layer on the foam of polymers per instant claims 32-38, 41 and 49 for support, flexural modulus, surface roughness or smoothness, and optical opacity (col. 4, lines 15-68, col. 5, lines 1-60, col. 6, lines 1-30) and paper to provide brightness and a good starting surface and good formation strength (col. 6, lines 1-30, instant claim 39).

To claims 19-20 and 29, Reeves does not teach the thickness, however it is an optimizable feature. It would have been obvious to one of ordinary skill in the art to produce a thickness as claimed, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272. Thickness effects the strength.

Reeves does not teach the flange and core base having inorganic, brighteners, tenting and whitening agents or opacity recitation as per claims 28 and 42-48 having a b* UVO or L* value as recited per claims 30-31.

Dontula teaches flange and core base having inorganic, brighteners, tenting and whitening agents as per claims 28 and 42-48 having b* UVO or L* value within Applicant's ranges as recited per instant claims 30-31 for enhancing optical properties (col. 4, lines 15-35, col. 6, line 15-45, Examples, Tables 1-3).

It would have been obvious to have modified the foam article of Reeves to include the ingredients having the values as per claims 28, 30-31 and 42-48 because Dontula teaches

including inorganic, brighteners, tenting and whitening agents as per claims 42-48 having b* UVO or L* value within Applicant's ranges as recited per instant claims 30-31 for enhancing optical properties and opacity (col. 4, lines 15-35, col. 6, line 15-45, Examples, Tables 1-3).

(10) Response to Argument

Applicant's arguments filed 05-22-07 have been fully considered but they are not persuasive.

Appellant argues the use of trademarked term Autochrome® and points to MPEP 608.01(v) stating the "Language such as "the product X (a descriptive name) sold under the trademark Y" is permissible", and amended Claim 26. However, amended Claim 26 does not include the descriptive name of Autochrome®. Merely stating a trademark is sold under its name is not descriptive enough to lead one skilled in the art to know what basic, generic ingredient/layer "Autochrome®" is. Applicant points to other US Patents to the use of Autochrome®, however, these are irrelevant to the instant claimed language of Appellant as Appellant has failed to give the description to what Autochrome®'s goods associated with its trademark is. Autochrome® is the source, not the actual goods themselves.

Appellant argues the Double Patenting and 103 rejections over Reeves and Dontula, alleging a single layer of foam with a density gradient is not taught or suggested. Appellant argues the wording of "at least one" is read as "there is on gradient-the gradient contained within the one layer". The Appellant has misinterpreted the claim language because "at least one layer" does not mean "within the one layer", hence the term "at least", meaning more than one, and not one only. Appellant's argument is not convincing because Appellant does not claim a single layer, but at least one closed cell foam layer. Appellant further alleges if there are two, or there

layers, then a density gradient is internal to each of the foam layers. The instant claim does not claim "each" and furthermore, the specification is absent a teaching of this argument. Appellant is merely arguing limitations not present in the claim. Appellant furthermore does not have support for a density gradient in a single layer. For instance, see page 17, lines 12-17 describing a density gradient being produced by extruding one polymeric mixture and a second polymeric mixture. Extrusion produces different layers and thus at least two layers are taught here. And further see Appellant's Fig. 3 and the Brief Description of the Drawings describing Figure 3 denoting the gradient density with a multiplicity of layers (the only one out of the 3 drawings to show a density gradient as claimed). Despite the instant specification teaching, in any event, the claims are broad enough to encompass the prior art teachings, especially the teachings of Reeves to this density gradient (varying density) and extrusion process, as taught in col. 3, lines 35-63 and col. 6, lines 15-40. Also see Reeves' Fig. 3, very similar in structure and in materials to Appellant's instant Fig. 3. Reeves explicitly teaches a construction where polymeric foam core material is extruded and is fused or bonded and varies in density; whereby the density is determined by the amount of air that is entrapped. Reeves further, explains how the varying density of the foams and composites are similar to extruded foam core, where the fusing is to the outer and inner skin layers. Thus, Reeves explicitly teaches the density is greater from the inner core to the outer surface, and vice versa (as Appellant claims per instant claims 1, and 10-11), thereby disclosing a density gradient in the same way as Appellant.

Appellant argues that Dontula '656 discloses imaging media on a closed cell foam base and argues that Reeves is non-analogous art and is in a different class. This argument is not convincing because Reeves and Dontula both teach closed cell foam sheets, and thus both are

analogous. Dontula teaches the added advantage of providing an imaging layer on the foam sheet. Therefore, Reeves does not have to provide the needs of supports for imaging layers as Appellant argues. Appellant further points to what a support must be and its thickness (pp. 16-17 of the instant specification). In response to Appellant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., stiffness, density reduction, thickness, etc. of pp. 16-17 of the instant specification) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Thus arguments to Reeve's lack of an imaging layer, which doesn't necessarily require an image nevertheless, does not have to be shown in Reeve's because Reeves is a primary reference, the motivation coming from the secondary reference to Dontula. Donutula does not have to teach a density gradient, as Appellant alleges, because Reeves teaches one. Therefore, the invention as a whole is taught.

Appellant argues one would not consider using fire-resistant insulation boards to preserve photographic images, arguing different classification and purposes, but purpose and classification are not a direct correlation as argued. Appellant further argues the stiffness of photographic paper of the instant invention pointing to the instant specification, for combinations as set forth above, however, Appellant has not claimed photographic paper, but "an article". Appellant further argues likelihood of success due to a variety of reasons, one of which in regards to materials that are too stiff are not maufacturable. Arguments of counsel do not take the place of evidence. See MPEP 716.01(c) [R-2]. Reeves teaches most of the claimed elements, providing an imaging layer is an obvious addition as Dontula teaches it provides a

similar structure excellent opacity in a single in-line operation and thereby reducing manufacturing costs (col. 4, lines 40-68).

For the arguments over Reeves in view of the secondary references of MacAulay, Lynn, Gluck, and Gehlsen, Appellant continues to allege all the secondary references do not teach or is silent to a density gradient, internal to each layer, nor an imaging layer. Again, the secondary references do not have to teach a density gradient, because Reeves teaches one, and an image is not required because the layer has to only be capable of being an imaging layer, which either outer layers of Reeves may fit this function (see Fig. 3's outer layers). A layer being capable of providing an image (imaging) is not germane since it has been held that an element that is "being able to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchinson*, 69 USPQ 138. Language that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation. Thus, as a whole the invention is taught. The aforementioned secondary references were all applied merely to teach expanded closed cell foams are well known in the art for their aforementioned advantages. While a polymer being expanded by use of a blowing agent is a process limitation, given little weight; nevertheless, Gluck was added also to show blowing agents are well known additives to produce an expanded closed cell foam as claimed (see Table 2, col. 6, lines 28-48) and Gehlsen as well teaches blowing agents are well known.

Appellant further argues Gluck and Gehlsen not being analogous art and not having success, further alleging Gluck does not teach foam. However, Gluck explicitly teaches foam and its foamable polymeric mixtures incorporating blowing agents (see Abstract, Title, col. 3,

col. 6, lines 28-48, and FIGs. 1 and 3). Gehlsen also teaches foams and blowing agents as shown in FIG. 7, the Background, and in Examples 59-61 for reducing density. All the reasons of the secondary references are sources of success. Thus, a density gradient and an imaging layer need not be in the same class or even present in the secondary references for them to be considered analogous art or successful.

Regarding Appeallants arguments over Dontula '976, similar arguments were made addressing the density gradient, more specifically to the density gradient decreasing from center to surface (page 41 of Appellant's arguments). The Examiner has explained where this rationale and result effective variable is taught in Reeves (col. 3 and col. 6). While not using the same wording, Reeves accomplished the same thing. Reeves explicitly teaches variation of density in foam cores as Appellant's in multiple layers as set forth above. Appellant argues she was unable to find any variable in claim 1. The variable is the density gradient. Density is effected by and is a direct result of the amount of air entrapped in the foam layer (see Reeves, col. 3, lines 48-62). Especially in col. 3, lines 55-60 a preferential gradient is disclosed by Reeves (lowest density at the center of foam core, highest density at outer surface of foam core), the reverse, decreasing from center to surface (a gradient) is taught by Reeves because Reeves explains the more expanded the cells of the core are, the lower the density of the polypropylene foam and that when fused or bonded together, the density is varied.

To arguments regarding likelihood of success, see rationale above.

Appellant argues no success when using Yamaguchi, to claim 26, however, Yamaguchi was used merely to teach the trademarked Autochrome® material, which appears is an optional imaging process yielding a lower cost (success) by not requiring ink or toner (see again, col. 1,

lines 1-25). Appellant also argues Yamaguchi does not teach foam used with an imaging layer, again, as a supplemental reference, where the primary reference teaches these elements, Yamaguchi need not teach. The Attachment B-1 is noted, but of no weight for reasons set forth above to the use of trademarks.

Appellant argues Tsuda as a supplemental reference having no success, again success is expected in view of the advantages of Tsuda as set forth above.

Appellant argues O'Neill is silent regarding an imaging element, however, O'Neill is not the primary reference, which teaches these limitations as set forth above. The classification system is again, not a complete indication to analogous art.

Appellant continues to argue a single layer of foam having a density gradient, to all those arguments, Appellant does not claim (nor have possession of) a single layer having a density gradient, but at least one closed cell foam layer.

Appellant argues O'Neill and Dontula are silent regarding the density gradients again, the primary reference-Reeves teaches this.

All other arguments to O'Neill and Dontula not providing success, similar arguments are addressed above.

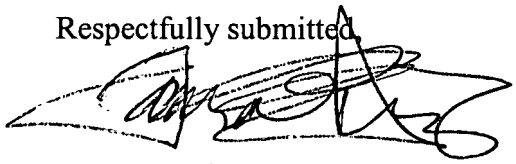
A *prima facie* case has been established, and therefore the burden shifts to the Appellant to submit additional objective evidence of nonobviousness, such as comparative test data showing that the claimed invention possesses improved properties not expected by the prior art. Arguments of counsel cannot take the place of factually supported objective evidence. See, e.g., In re Huang, 100 F.3d 135,139-40, 40 USPQ2d 1685, 1689 (Fed. Cir. 1996); In re De Blauwe, 736 F.2d 699,705, 222 USPQ 191, 196 (Fed. Cir. 1984).

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



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